

R E M A R K S

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Claims 2, 4, 6 and 10 to 12 as set forth in Appendix II of this paper are now pending in this case. Claims 1, 3, 5, 7 and 9 have been canceled, Claims 2 and 6 have been amended, and Claims 10 to 12 have been added, as indicated in the Listing of Claims in Appendix I of this paper.

Accordingly, Claim 2 has been amended to read on the subject matter of Claim 3 in independent form, and Claim 6 has been amended to depend upon Claim 2. New Claim 10 further specifies the process of Claim 4 corresponding to the limitations set forth in Claim 6 with regard to the process of Claim 2. New Claim 11 is drawn to the subject matter previously defined in Claim 4, ie. without the feature herewith introduced into Claim 2, and new Claim 12 further specifies the process of Claim 11 corresponding to the limitations set forth in Claim 6 with regard to the process of Claim 2.

No new matter has been added. In light of the foregoing and the attached, the independent claims now pending in the application, ie. Claims 2 and 11, read on the subject matter previously defined in Claim 3 and 4. Claims 3 and 4 were indicated by the Examiner as allowable if rewritten in independent form. Hence, Claims 2 and 11 should now be in condition for allowance. The remaining claims are dependent from Claims 2 and 11 and should, therefore equally be in condition for allowance (*if an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (CAFC 1988)*). Favorable action is solicited.

Please charge any shortage in fees due in connection with the filing of this paper, including Extension of Time fees to Deposit Account No. 11.0345. Please credit any excess fees to such deposit account.

Respectfully submitted,  
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Encl.: THE LISTING OF CLAIMS (Appendix I)  
THE AMENDED CLAIMS (Appendix II)

HBK/BAS

## APPENDIX I:

THE LISTING OF CLAIMS (version with markings, showing the changes made):

1. (canceled)
2. (currently amended) A process for purification of ethylene oxide by distillation, comprising the step in which
  - an aqueous mixture comprising ethylene oxide, formaldehyde and at least 5% by weight of water is introduced via a feed into a distillation apparatus comprising at least one packed column which contains a structured or bulk packing and has a specific mass transfer area A, the mixture being introduced at a height above the bottom of at least  $x^{\min}$ , in m, which, for a given specific mass transfer area A, in  $\text{m}^2/\text{m}^3$ , is given by the equation
$$x^{\min} = 5.5 \text{ m} - A \cdot 0.006 \text{ m}^2,$$
  - pure ethylene oxide containing 4 ppm or less formaldehyde, is taken off at the top and
  - in the bottom phase a mixture is obtained which contains less than 5% by weight of ethylene oxide[+];  
and wherein the aqueous mixture is introduced via the feed at a height of from  $1.5x^{\min}$  to  $7x^{\min}$ .
3. (canceled)
4. (previously amended) A process as claimed in claim 2, wherein the specific mass transfer area A is in the range from  $100 \text{ m}^2/\text{m}^3$  to  $500 \text{ m}^2/\text{m}^3$ .
5. (canceled)
6. (currently amended) A process as claimed in claim [1] 2, which further comprises [the] a step in which further mixture, comprising water, is additionally introduced via a feed line at a height of at least one theoretical stage or plate above the feed of the aqueous mixture.
7. (canceled)
8. (canceled)
9. (canceled)

10. (new) A process as claimed in claim 4, which further comprises a step in which further mixture, comprising water, is additionally introduced via a feed line at a height of at least one theoretical stage or plate above the feed of the aqueous mixture.
11. (new) A process for purification of ethylene oxide by distillation, comprising the step in which
  - an aqueous mixture comprising ethylene oxide, formaldehyde and at least 5% by weight of water is introduced via a feed into a distillation apparatus comprising at least one packed column which contains a structured or bulk packing and has a specific mass transfer area A, the mixture being introduced at a height above the bottom of at least  $x^{\min}$ , in m, which, for a given specific mass transfer area A, in  $\text{m}^2/\text{m}^3$ , is given by the equation
$$x^{\min} = 5.5 \text{ m} - A \cdot 0.006 \text{ m}^2,$$
  - pure ethylene oxide containing 4 ppm or less formaldehyde, is taken off at the top and
  - in the bottom phase a mixture is obtained which contains less than 5% by weight of ethylene oxide;and wherein the specific mass transfer area A is in the range from  $100 \text{ m}^2/\text{m}^3$  to  $500 \text{ m}^2/\text{m}^3$ .
12. (new) A process as claimed in claim 11, which further comprises a step in which further mixture, comprising water, is additionally introduced via a feed line at a height of at least one theoretical stage or plate above the feed of the aqueous mixture.

## APPENDIX II:

THE AMENDED CLAIMS (clean version of all claims):

2. (currently amended) A process for purification of ethylene oxide by distillation, comprising the step in which
  - an aqueous mixture comprising ethylene oxide, formaldehyde and at least 5% by weight of water is introduced via a feed into a distillation apparatus comprising at least one packed column which contains a structured or bulk packing and has a specific mass transfer area A, the mixture being introduced at a height above the bottom of at least  $x^{\min}$ , in m, which, for a given specific mass transfer area A, in  $\text{m}^2/\text{m}^3$ , is given by the equation
$$x^{\min} = 5.5 \text{ m} - A \cdot 0.006 \text{ m}^2,$$
  - pure ethylene oxide containing 4 ppm or less formaldehyde, is taken off at the top and
  - in the bottom phase a mixture is obtained which contains less than 5% by weight of ethylene oxide;and wherein the aqueous mixture is introduced via the feed at a height of from  $1.5x^{\min}$  to  $7x^{\min}$ .
4. (previously amended) A process as claimed in claim 2, wherein the specific mass transfer area A is in the range from  $100 \text{ m}^2/\text{m}^3$  to  $500 \text{ m}^2/\text{m}^3$ .
6. (currently amended) A process as claimed in claim 2, which further comprises a step in which further mixture, comprising water, is additionally introduced via a feed line at a height of at least one theoretical stage or plate above the feed of the aqueous mixture.
10. (new) A process as claimed in claim 4, which further comprises a step in which further mixture, comprising water, is additionally introduced via a feed line at a height of at least one theoretical stage or plate above the feed of the aqueous mixture.
11. (new) A process for purification of ethylene oxide by distillation, comprising the step in which
  - an aqueous mixture comprising ethylene oxide, formaldehyde and at least 5% by weight of water is introduced via a feed into a distillation apparatus comprising at least one packed column which contains a structured or bulk packing and has a

specific mass transfer area A, the mixture being introduced at a height above the bottom of at least  $x^{\min}$ , in m, which, for a given specific mass transfer area A, in  $\text{m}^2/\text{m}^3$ , is given by the equation

$$x^{\min} = 5.5 \text{ m} - A \cdot 0.006 \text{ m}^2,$$

- pure ethylene oxide containing 4 ppm or less formaldehyde, is taken off at the top and
- in the bottom phase a mixture is obtained which contains less than 5% by weight of ethylene oxide;

and wherein the specific mass transfer area A is in the range from 100  $\text{m}^2/\text{m}^3$  to 500  $\text{m}^2/\text{m}^3$ .

12. (new) A process as claimed in claim 11, which further comprises a step in which further mixture, comprising water, is additionally introduced via a feed line at a height of at least one theoretical stage or plate above the feed of the aqueous mixture.